

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of:	§	
Jerry L. MIZELL et al.	§	Confirmation No. 8303
	§	
Serial No.: 10/025,543	§	Group Art Unit: 2616
	§	
Filed: December 18, 2001	§	Examiner: Jay P. Patel
	§	
For: Node, Network, and Method for Providing	§	
Quality of Service Adjustments on a Per-	§	
Application Basis	§	

DECLARATION UNDER 37 C.F.R. § 1.131

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Commissioner for Patents

P.O. Box 1450

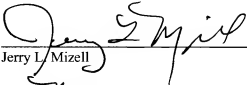
Alexandria, VA 22313-1450

Dear Sir:

I, Jerry L. Mizell, being duly sworn, depose and say:

1. I am one of the inventors of the subject matter of the above-identified patent application as therein described and claimed.
2. All acts described in this affidavit took place in the United States of America.
3. Prior to August 9, 2001, I and my co-inventors first conceived of the invention claimed in the above-identified patent application. After collaboration with my co-inventors, on March 29, 2001, I disclosed this invention to Nortel's in-house patent attorneys, using the presentation provided in Exhibit A.
4. On or about August 24, 2001, Nortel hired the law firm of Munsch, Hardt, Kopf & Harr to prepare the above-identified patent application.
5. From on or about August 24, 2001, until the application was filed, I and my patent attorneys worked together to prepare the above-identified patent application.
6. On December 18, 2001, the patent application was filed with the U.S. Patent and Trademark Office.
7. At no time were my activities regarding disclosure of my invention in the above-identified patent application ever suspended. It was my constant and continuous intention to diligently move towards disclosure of my invention by filing the above-identified patent application.
8. Based on the foregoing facts, I believe that I and my co-inventors conceived of the above-referenced invention prior to August 9, 2001, and that I was diligent in preparing the patent application for filing on December 18, 2001.

9. I declare that all statement made herein of my knowledge are true and that all statements made on information and belief are believed to be true and that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code.



Jerry L. Mizell
Date: Nov. 30, 2007

D-1597848_1.DOC

Invention Disclosure Submission Reply

14413RR

Per Application Qos Adjustments in UMTS

Inventors

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Attachments

<End of Attachments>

[illegible]

Leitenden Sitzungsleiter

UMTS currently provides for Quality of Service (QoS) on the Gn interface (SGSN-GGSN) on a per PDP context basis. According to the standards, each mobile subscriber can initiate multiple PDP contexts with each context having its own associated QoS. This scheme has some short-comings:

The UMTS defined QoS is only applicable to the Gn interface

The standards assume that both the mobile terminal and the network will be capable of supporting multiple PDP contexts in order to provide differentiation in QoS among applications.

The standard assumes that all applications sharing a PDP context should receive the same QoS treatment.

This invention improves on the standardized methods by using application filtering. Within the GGSN, while processing data for a PDP context, a filter is applied to identify individual applications. The packets for each application are then marked with the appropriate DiffServ code points for that type of traffic. The DiffServ marking is used on the Gi interface for providing traffic differentiation. The DiffServ marking can also be applied on the Gn interface to provide traffic differentiation within the UMTS Core Network.

This invention provides for extension of application-based QoS, which takes advantage of the IETF work on DiffServ, onto a UMTS network. Application of this scheme is equally appropriate in both IPv4 and IPv6 networks. Many early mobile terminals will support only one PDP context. Therefore they cannot take advantage of the QoS mechanisms provided by UMTS. This invention allows the operator to provide enhanced service for certain applications even for simple terminals.

This invention can be applied to GPRS (both Release 97 and Release 99) as well as UMTS.

By using this invention, the operator can provide traffic classification and QoS even for applications and terminals that are not QoS-aware. The UMTS standards assume that QoS operations are initiated by the terminal or mobile subscriber's application. The standards, while providing for secondary PDP contexts, are not clear on how the secondary contexts work in practice. This lack of clarity leaves operations open to interpretation by both network and mobile vendors. This invention provides a rules based approach to QoS which need not be standardized further.

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144B RC

**Per Application Qos Adjustments
in UMTS
14413RR
Jerry Mizell
Dave Lauson
Pete Wenzel**

Per Application QoS Adjustments

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- This invention improves on the standardized methods by using application filtering. Within the GGSN, while processing data for a PDP context, a filter is applied to identify individual applications. The packets for each application are then marked with the appropriate DiffServ code points for that type of traffic. The DiffServ marking is used on the Gi interface for providing traffic differentiation. The DiffServ marking can also be applied on the Gn interface to provide traffic differentiation within the UMTS Core Network.

Why is this Important?

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- Many early mobile terminals will support only one PDP context. Therefore they cannot take advantage of the QoS mechanisms provided by UMTS. This invention allows the operator to provide enhanced service for certain applications even for simple terminals.
- This invention can be applied to GPRS (both Release 97 and Release 99) as well as UMTS.
- By using this invention, the operator can provide traffic classification and QoS even for applications and terminals that are not QoS-aware. The UMTS standards assume that QoS operations are initiated by the terminal or mobile subscriber's application.
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